

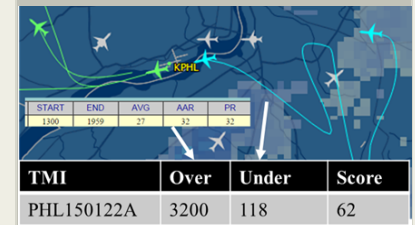
## TFM Performance Monitoring and Review System, Phase I

Completed Technology Project (2015 - 2015)



## Project Introduction

A wide variety of flow management techniques is employed every day in the NAS, from strategic Ground Delay Programs (GDP's) with national scope to local Miles-In-Trail (MIT) restrictions that affect traffic over a specific fix. The choice of the flow management technique to employ and the timing, extent, and other parameters associated with the technique are determined by controller judgment informed by experience. However, experience is only as useful as the information that can be assimilated from it, and in the case of flow management decisions the available information is limited and biased. We propose to research and prototype a system that will provide controllers with the metrics they need to understand how their past decisions fared. Our proposal in this Phase I SBIR is to perform the research to determine how well such metrics could be made to function. Phase II would extend the work to implement metrics that could be used within NASA efforts and later transitioned to the FAA for its use. The proposed metrics do not attempt to determine what the "correct" level of restrictions would have been. The appropriate amount of restriction to apply in any situation is a matter of judgment that must weigh the certainty of the information on which it is based as well as the outcomes that would result from errors in either direction. Rather, the metric would quantify the restrictions' performance in hindsight. To quantify performance of a GDP, for instance, it would measure the degree to which tactical flow management had to make up for excessive airborne demand for the airport, and the degree to which insufficient demand was available to fill the airport's capacity. Second-order effects the metric would quantify include the degree to which the traffic originating in-center, in tier one, in tier two, and farther away gained or lost priority relative to each other, indicative of the GDP's timing relative to the timing of the demand/capacity imbalance.



TFM Performance Monitoring and Review System, Phase I

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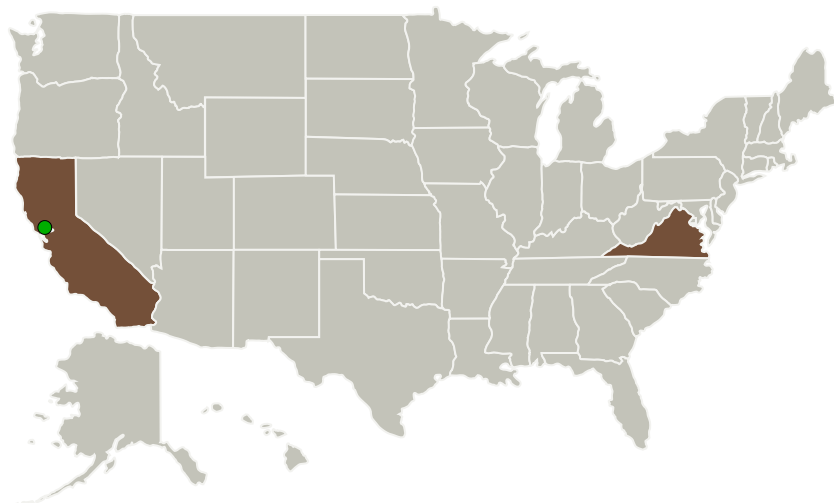
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## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Mosaic ATM, Inc.	Lead Organization	Industry	Leesburg, Virginia
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

## Primary U.S. Work Locations

California	Virginia
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## Project Transitions

▶ **June 2015:** Project Start

✓ **December 2015:** Closed out

**Closeout Summary:** TFM Performance Monitoring and Review System, Phase I Project Image

**Closeout Documentation:**

- Final Summary Chart Image(<https://techport.nasa.gov/file/137661>)

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Mosaic ATM, Inc.

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

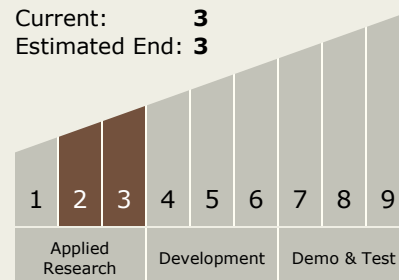
Carlos Torrez

**Principal Investigator:**

William Hall

## Technology Maturity (TRL)

Start: 2  
Current: 3  
Estimated End: 3

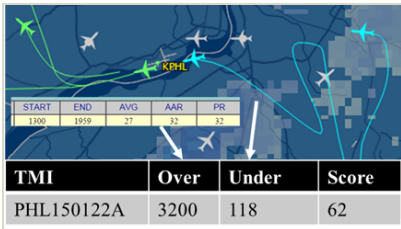


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## Images



## Briefing Chart Image

TFM Performance Monitoring and Review System, Phase I  
(<https://techport.nasa.gov/image/132861>)

## Technology Areas

## Primary:

- TX15 Flight Vehicle Systems
  - └ TX15.1 Aerosciences
    - └ TX15.1.5 Propulsion Flowpath and Interactions

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System